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## OUTFITS AND OUTFITTERS.

It is quite a treat to stroll along the streets lying between London Bridge and the London Docks, and glance into the shop-windows of the outfitters, as they call themselves. Before emigration became a passion among us, an outfitter was a steady, responsible sort of man, something between a hosier and a tailor; living somewhere about Leadenhall Street; supplying all the clothing for persons going out on distant voyages, together with bedding, and a few miscellaneous articles. Such men have certainly neither diminished in number nor in extent of business; but a host of new names have appeared, and, however they may differ in ostensible employment, they all undertake to supply everything; and each one assures you, that you cannot possibly do better than purchase the whole of your emigrant rattle-traps from him. A few of these newly-fledged outfitters are to be met with in the centre and the west end of the town; but when we have passed St Paul's, on the route eastward, we get into the thick of them. In the windows, and at the doors of these shops, we see flaming announcements that the *Lightning*, or the *Arrow*, or the *Stag*, or some equally swift vessel, is now lying at the London Docks; that she will positively sail for Melbourne next Thursday; that she has still a few eligible berths disengaged; and that you should make immediate application to Messrs Gold and Bullion, ship and emigration agents, residing in some alley or other turning out of Cornhill. These bills are supplied to the outfitters by the ship-agents; and we may not doubt that the ship-agents, in their turn, give publicity to the placards of the outfitters. There was, if we mistake not, one of these shops, which, some time back, displayed an electro-gilt mass of something, as a specimen of Australian gold, and as giving the beholder a foretaste of the dazzling fortune which awaited him if he would only buy his outfit at that shop. It is quite amazing how broad and deep is the sympathy with which your interests are regarded, even to the extent of 'providing belts, which may be worn round the waist,' and which have a number of little pouches, or pockets, for containing gold-dust; and surely Her Majesty's Life-guards never wore boots so tall or so formidable as those which are now offered to you, as protectives against cold while at the diggings. The mind of man is ransacked in your service, and all the comforts of life are laid at your feet, that you may be as cheery as possible while engaged in your arduous labours in Australia. All the smaller articles are, as we have said, procurable in the neighbourhood of the Docks; but the emigrant houses are announced from elsewhere: they are too curious to be

passed unnoticed, and they, therefore, must have a word from us.

The ingenuity displayed in some of these contrivances is really remarkable. One man has contrived 'patent portable houses, composed of packing-cases, so arranged that in a few hours they can be erected into a substantial weather-proof dwelling or warehouse;' and shippers are wisely recommended, before ordering packing-cases for their goods, to come and look at these economical productions. Another advertises, that emigrants and others who require colonial houses, can be supplied with doors, frames, and sashes, at a very cheap rate. There is another inventive contriver, whose works are at Birmingham, and whose plans seem to be so carefully studied, that we can hardly do better than transcribe his description:—'Each house is sent out packed in a wooden case, occupying very little room, the boards of which, when unpacked, form the flooring. *The packing-case contains the entire house, covering and framework, which consists of patent-grooved wooded iron standards, upper frame, principals which form the roof, and joists to be raised from the ground; four pieces of deal-quartermen, corresponding with the size of the house, in which the standards are to be inserted in the holes made for them, and firmly fastened by means of wedges; door, hinges, and lock; glazed window and shutter; ridge-pieces of patent-grooved iron, fitted with wood, with tangs at both ends, to be inserted in the centre between the principals; zinc plates cut to fit the framework, which do not come into contact with the iron; patent inodorous felt, cut into sheets of the same size as the zinc plates, to be laid one upon another, the felt inside, and nailed to the standards, allowance being made for contraction and expansion; the necessary quantity of zinc, nails, pins, bolts, &c., for the erection; and decorative paper for the whole of the interior. The felt inside the zinc completely obviates the unpleasantness arising from the metallic substance, by being a non-conductor, making the house cool in summer and warm in winter.' A complete house truly; and in how small a space does the reader suppose the house can be packed? 'The measurement of a house 13 feet 2 inches, by 10 feet 4 inches, packed in the flooring-boards belonging to it, is only 13 feet, by 3 feet 4½ inches wide, and 8½ inches deep, and is something under three-quarters of a ton, shipping measure.' Some inventors do not soar so high as emigrant houses, they limit their attention to emigrant tents. Here is a thoughtful and benevolent man, who states that 'it is often impossible, always expensive, for emigrants to procure a shelter when they arrive at their destinations. No one, therefore, should leave England without a portable home. This can be done*

by taking a registered portable tent—nothing is equal to them, they are so portable, so simple, and so convenient.' And another tent-maker states, that his comfortable tents for emigrants can each be folded up as small as a portmanteau. Here is 'a cart and tent combined;' it is suitable for a horse or a pair of bullocks; it will convey emigrants from the ship to the diggings; 'and when there, it forms a comfortable sleeping-apartment;' the wheels, shafts, hoops, tarpaulin, bed-mattress, &c., are so contrived that they can all be packed in the cart for freight, in the form of a large, snug, flattish quadrangular box. Of larger and more expensive dwellings, intended for those who can command more capital, Liverpool, Manchester, Bristol, Birmingham, and other busy towns, now produce considerable numbers, made with much ingenuity, of sheet-iron. One manufacturer cunningly reminds us, that a moderate-sized house commands a rental of L.300 or L.400 a year at Melbourne; and after announcing that he can make a good portable house for L.50 or L.60, he leaves us to draw our inferences as to the profit realisable thereby.

But whether the emigrant take out his own house or not, the regions of Tower Hill will supply him with an extraordinary assemblage of furniture suitable to his wants. The cooking-stoves are quite a triumph in themselves—so many useful articles being packed in a small space. Here is the 'Emigrants' Cottage Stove;' it looks like an iron box about two feet square, and yet, when it is opened, it displays to view a stove, an oven, a Dutch oven for the front of the fire, a boiler, a hot plate, three sauce-pans, a gridiron, a frying-pan, four legs to support the stove, and a funnel to carry off the smoke. And we are told that, on one occasion at Port Natal, a dinner for twenty persons, among whom was the governor, was cooked at one of these stoves: the said dinner comprising a boiled round of beef, a roast round of beef, a roast turkey, four roast ducks, six boiled fowls, a roast sucking-pig, a baked mutton-pie, a boiled ham, and several baked tarts; and his excellency is reported to have said, that 'he never sat down to a better dinner.' Think of that, ye emigrants! From the 'bachelor's kettle'—which can be had for about three shillings, and which will boil water for breakfast by the use of a farthing's worth of firewood placed in a receptacle beneath it—up to the complex and costly cooking apparatus, all tastes and all purses can be accommodated. Assuredly, not the least remarkable culinary conundrum is the 'portable-kitchen,' which stares you in the face in a dozen or more shops near Tower Hill. This conundrum consists of a tin, or rather tinued-iron square box, 14 inches long by 10 wide and 10 deep; and we now beg the reader to listen to an enumeration of its contents:—a stove, adapted for wood-fuel; a fish-kettle or boiler; a sauce-pan and steamer; two stew-pans; a tea-kettle; a tea or coffee canister; a frying-pan; a gridiron; a tea-pot; a coffee-pot; a sugar-basin; a milk-pot; three cups and saucers; two dishes, six plates; three pair of knives and forks; two table-spoons, and three tea-spoons—and very bright they all look, too; they are all metal, tea-cups and saucers included—a few covered with white enamel, but the greater part left in metallic brightness. Forty shillings may seem dear for a tin-box containing tin and iron goods; but recollecting that we have here a breakfast-service, dinner-service, tea-service, and a stove and cooking vessels into the bargain, to complain

would surely be too bad. Nor are the other requisites for the emigrant's kitchen forgotten by the outfitters. Besides a goodly variety of individually complete iron and tin pots and sauce-pans, kettles, frying-pans, gridirons, tea and coffee pots, &c., there are metal mustard and pepper and salt cruets, metal trays, metal pie-dishes and pudding-tins, colanders, American ovens, strainers and skewers and funnels, candlesticks and candle-boxes, and sundry articles made of metal which surely were never made of metal before. We have been especially struck with one kitchen appendage of a thorough go-ahead character. 'Every man his own candlemaker,' is the doctrine which has given birth to this apparatus, which is nothing less than a contrivance for making mould candles. Tallow is very plentiful in Australia, and out of this tallow the emigrant may make his own candles. There is a tin frame, with six vertical tin tubes; you arrange a cotton wick down the middle of each tube; you melt your tallow; you pour it into a kind of trough at the top of the frame; the tallow flows down the tubes, and solidifies; and by a gentle movement, you thrust forth to the light of day six smart mould candles.

The bedroom and sitting-room are no more neglected than the kitchen. Everything that can be made to fold upon hinges or pivots is so made; and it is perfectly wonderful how much is congregated within a small space. Iron bedsteads, we all know well enough, greatly economise space in packing; and our outfitters carry that principle to its utmost verge. Some are called bedsteads, some cots, some hammocks, some couches, some chair-beds; but call them what we may, a bit of iron and a bit of sacking are so managed as to make a mighty show when spread out, and yet so small as to be 'nothing to speak of' when closed. And the mattresses, bolsters, pillows, counterpanes, blankets, and sheets, though necessarily differing but little from those used by home-staying folks, are yet somehow packed so snugly as to appear quite infantine. The wash-hand stands are especially ingenious: being intended both for the cramped cabin on shipboard and for service at the diggings, they consist of the smallest possible quantity of material, judiciously arranged. The most Lilliputian specimen we have seen is nothing but a flat tin-box about five inches deep; and yet, when opened, there is a basin, and a stand to place it on, and a water-can, and a soap-dish, and a brush-tray. It is almost as clever as the toyshop full of trinkets taken out of a hat by the Great Wizard. Of clothes-brushes, hair-brushes, nail-brushes, tooth-brushes, looking-glasses, combs, sponges, sponge-bags, shaving-tackle, soap—we need not speak particularly. And yet, in respect to soap, there are placards enow announcing the merits of the new marine-soap, for the use of those on shipboard, and which, from some peculiarity in its constituent ingredients, is better fitted than ordinary soap for washing with sea-water.

The articles of dress, as may be supposed, occupy more of the outfitters' attention than anything else; and, indeed, the outfitters were originally those who, engaged especially in the clothing trade, superadded other items to their range of business. The street called Houndsditch is the head-quarters of the wholesale clothiers; there is very little ticketing or placarding in the windows; but where large bodies of men—such as soldiers, sailors, policemen, prisoners—have to be

clothed, Houndeditch and its vicinity have much to do with the matter; and we can hardly doubt that emigrant clothing comes in large quantity from the same quarter. The poor sempstresses and the slop-tailors, whose condition is so often before the public notice, are the great workers on all these garments. However, come from whence it may, there is a huge display of emigrant clothing at the outfitters' shops; and most exact calculations of the number and kind of garments which can be obtained for an exact number of pounds and shillings. A man who never dreams of wearing a night-cap at home, is here told exactly how many he ought to take with him; and he is initiated in the ratio which the number of night-shirts ought to bear to the number of day ditto. The differences of climate are studied, that the emigrant may not be roasted in woollens in hot weather, and frozen in cottons in cold. Then there is a sort of a knowing wide-awake cut given to most of the garments—a free-and-easy shipboard appearance, denoting that the wearer feels permitted to throw off the conventionalities of town-life; his hat will bear knocking about; his cutty-jacket or coat has plenty of pockets; his shirt-front has none of the nonsense of snowy whiteness, but will bear a tolerable amount of dirt without shewing it; and although the mysteries of lady-clothing are not to be openly talked about, we cannot doubt that the *utile* prevails therein over the *dulce* in emigrant outfits.

Some outfitters extend their list of clothing into 'infinite space'; they enumerate all the kinds of garments which emigrants will, may, might, or ought to require; and they affix a wide range of prices to these articles—so wide, indeed, that they afford very little real information to the intending purchaser. Here, in the list from an establishment, in which about a dozen shops seem to be rolled into one, we are told that night-caps, of cotton or silk, are from 4d. to 4s. each—an expansibility of price which leaves one bewildered. There is, however, variety enough in material and in price to suit every possible purchaser. Take the article of jackets, for example: here we have them made of 'white jean, sateen, linen drill, coloured drill, cloth, Persian cloth, camel, cashmerette, merino, silk, and pilot-cloth,' from three shillings, up to—anything you please. Then there are trousers, of pretty nearly the same list of materials, with the addition of 'mosquito'—a cloth with which we do not claim to be acquainted; and waistcoats of silk, kerseymere, white jean, sateen, quilting, merino, and Welsh flannel. There are enough of pilot-coats, pilot-waistcoats, pilot-jackets, and pilot-trousers, to turn half the emigrants into hypothetical pilots. Some of the outfitters are more definite in their announcements; they have had mercy on the slender arithmetic of the emigrants, and inform each one precisely how much he can obtain, and of what kind, for a given value in coin of the realm. Some of these lists are really worth quoting. Here is 'an outfit for L.3, 15s.'—Two jackets, two waistcoats, two pair of trousers, one duck-frock, twelve shirts, twelve pair of stockings, six handkerchiefs, six towels, two pair of braces, a bed, a blanket, a counterpane, two sheets, a cap, a weather-hat, two pair of shoes, a hair-brush, a comb, a razor and strop, a soap-dish, a looking-glass, a knife and fork, a plate, a mug, a table-spoon, a tea-spoon, six pounds of soap, needle and thread, and a chest to contain them all. It is quite evident that the power of cheapness is here driven to the utmost verge; the articles in themselves must be worthy of a little study, as examples of what can now be purchased for a small sum of money—whether they are worth the money after all, is a question which we should like to see answered by emigrants who can speak from practical experience. Our friends, the outfitters, give another list for L.6, 15s., differing from the former principally by the appearance of cloth-coats and waistcoats and trousers, in lieu of, or in addition to,

those of humbler materials. But passing over this list, we are curious to see how an emigrant may be 'quite the gentleman' for L.11, 11s.—Black dress-coat and waistcoat and trousers, frock-coat, fancy waistcoat and trousers, paletôt, fishing or shooting coat, hat, cloth-cap, eighteen shirts, four night-shirts, pair of boots, pair of shoes, six handkerchiefs, twelve pair of cotton hose, two pair of braces, two night-caps, six towels, six pounds of marine-soap, razor, shaving-box, strop, glass, knife, fork, plate, mug, table-spoon, tea-spoon, bed, pillow, pair of blankets, counterpane, two pair of sheets, two pillow-cases, comb, hair-brush, and a strong sea-chest. It puts one out of breath to run through the list—and all for eleven guineas!

If, on peeping into the shops round about Tower Hill, we see small cylindrical canisters carefully sealed up, we may be pretty certain that they contain preserved food for emigrants and sea-going people. This comparatively modern trade of bringing animal and vegetable food into a state which it will maintain uninjured for months or years, is becoming very important. We noticed it in a former article.\* The object originally was to afford fresh meat to seamen on long voyages of peculiar character, such as those to the arctic regions; but any emigrants who can afford the outlay, may add greatly to their comforts by securing a few canisters of well-preserved food. The processes were first applied to meats, soups, and vegetables; but they are now with equal success rendered applicable to fish, game, and poultry. Some of these preserved meats—which are cooked and freed from bone—nearly equal double the weight of undressed meat. In other instances, such as the essence of beef, the concentrated juice of the meat is in a state to be at once warmed up into soup. In another example, that of potatoes, the potato appears in the state of small dry crumbs, which are speedily converted by a little boiling water into the state of mashed potatoes. As we stated in the article just adverted to, the canisters of preserved provisions contain soups of mock-turtle, ox-tail, mulligatawny, venison, and all the food usually converted into soups or broths; salmon, trout, turbot, mackerel, herring, haddock, lobster, oyster, and other kinds of fish; ducks, fowls, grouse, hare, and the usual routine of poultry and game; beef, veal, and mutton, in all the forms which the cook can give to them by roasting, boiling, frying, broiling, mincing, stewing, and currying; pease, beans, French-beans, carrots, parsneps, turnips, and other vegetables; and a savoury list of sundries, comprising corned and collared and smoked ox-tongues, York hams, bacon, stewed kidneys, tripe and onions, beef-marrow, cream, milk, marmalade, &c. It is not a little curious, that some of the voyagers to Australia take with them cases of preserved meat which have been brought from that very colony. There is an agency in the Minorities for the sale of food preserved at Newcastle in Australia; the varieties comprise, we believe, only beef and mutton; but it is of some importance to know that Australia can manage such matters, and can sell such produce at a profit in London, after paying freight for a voyage of 16,000 miles. The transaction presents a pleasant approximation to the renowned feat of 'carrying coal to Newcastle.' Borden's American meat-biscuit now makes its appearance among the provision-stores. Milk is so grateful a beverage, especially to children, that the power of taking it out on a long voyage is justly regarded as a valuable one. The officers of the arctic expeditions seem especially to recommend it, in the state packed in tins for voyages; in this state, it is so concentrated, that when diluted with six times its weight of water, it produces very tolerable milk, perchance quite equal to the doubtful London milk. There are also milk and

\* No. 460, new series, p. 237.



cocon, milk and chocolate, and milk and flour, in a state ready for immediate use by heating.

The outfitter does not desert the emigrant when he has shipped him off; he follows him to the diggings, and there sets him to work. Every imaginable contrivance which can torture a lump of quartz into a nice golden nugget is to be met with in the Tower-Hill regions. Here is a manufacturer who exhibits his 'patent barrow, gold-washing machine'—a wheelbarrow with a winch and a cylindrical wire-cage—his gold sieves, his bowls and galvanised buckets, his picks, shovels, spades, barrows, hammers, and crow-bars, and his tent-cart, which will convey the emigrant to the diggings, and then house him there. Another displays his 'set of miners' tools for twenty shillings,' comprising a shovel, a hand-pick, a pickaxe, an earth-borer, an earth-auger, an earth-ladle, a crow-bar, a hand-hammer, a rock-chisel, and a melting-ladle; and for an extra five shillings, there is 'a case for ditto, with lock and key.' A third has applied his ingenuity to the production of gold-detector machines, quartz-crushing and grinding mills, for hand, steam, or water power, blasting-tools, and a most varied range of industrial appliances.

Thus the reader will see that a very profitable amount of information may be picked up about outfits and outfitters, in the course of a few hours spent in the line of route leading from Cornhill to the London Docks.

#### CHANGE OF CLIMATE.

A few years ago, a work on climate in reference to health and disease was contributed to popular medical literature by Sir James Clark, and now the subject has received fresh illustration by the researches of Dr Francis.\* This last-mentioned writer, as may be seen from his title-page, confines himself to certain chronic affections, and treats almost exclusively of the most eligible places of residence for invalids in Spain, Portugal, and Algeria; in this latter respect, he enters on new ground, and affords a variety of information, useful alike to the profession and to those who stand in need of what is generally styled 'a change of air.' As the result of personal inquiry, during five years spent abroad, the work of Dr Francis may be presumed to carry considerable weight; and after a perusal of its contents, we can recommend it for the important quality of being a pleasantly written and amusing production.

On the general question, as to change of air, the writer demonstrates its beneficial effects both in preventing the approach of certain diseases, and in arresting them when not too far developed. That the air differs in some of its properties in different localities, independently of mere temperature and humidity, is a well-known fact. It has been recently discovered, that air in a condition fit for respiration, contains a certain small proportion of ozone, which is believed to be useful as a purifier of the atmosphere, but is irritating and injurious when in excess. 'Faraday tested the air to the windward of Brighton, and found ozone, whilst in that town itself there was none. It would seem that the wind in its passage over towns has its ozone more or less consumed in oxidising gaseous impurities.' Curious inquiries of this kind shew the advantage of living in open situations, where the air is neither loaded with injurious, nor deprived of its beneficial, properties. The things, however, which are felt most severely by those in delicate health, are cold, damp, and variability; and these are the three conditions which render the climate of the British islands so damaging

to valetudinarians. Cold we can remedy in some degree by artificial warmth, but humidity and variableness are pretty nearly beyond the reach of art. In general circumstances, humidity is the destructive element in our climate. It is the damp air that kills. A man may endure excessive cold or intense heat with little damage to health, provided the air is dry. The prodigious marches which not only the native but the French, and our own armies, were able to make during the war in Spain, are instanced as examples of the exertion which may be undergone without fatigue in a dry state of atmosphere. To moisture of climate with dull skies, and the consequent disposition to spend life within doors—that is, to seek some species of enjoyment in seclusion—may be imputed not a little of the intemperance of northern climates. Light and dry air, with a clear blue sky overhead, not by fits and starts, as in England, but as a permanence for months, or nearly the whole year round, acts as a powerful natural exhilarant, and supersedes any necessity for artificial stimuli. In this delicious kind of climate, there is enjoyment in the very consciousness of existence; and in various disorders, health is restored by the mere act of breathing. The finer the climate, also, the more simple needs to be the food. A vegetable diet does not suit the Englishman; it produces atonic dyspepsia even in Western France; but in Spain it leads to no bad effects. 'In the dry air of Murcia,' says Dr Francis, 'whole families of the very poor may be seen to go out into the gardens that abound there, and, sitting upon the ground, dine on a profusion of raw lettuces; courteously and gravely inviting the passer-by, after the Spanish custom, to partake of their repast. The enormous quantities of oil that are habitually consumed by the rich and poor in such countries, give further evidence of a power of digestion to which the rebellious stomachs of those who dwell in softer and more humid climates seldom attain. In the province of Valencia, I have repeatedly seen the wiry, active muleteers make a mid-day meal of a lump of bread, into a hole in the centre of which a quarter pint of oil had been poured. The same thing may be witnessed among the Moors in Algeria.' The oil here mentioned is of course olive oil, which, in Southern Europe, acts the part we assign to butter and other animal fats.

In any part of England or Scotland, from 130 to 160 rainy days in the year may be reckoned on, besides a certain amount of fog, damp, and clouded atmosphere. Now, for the invalid affected with a pulmonary complaint, 'this implies the necessity on many days of taking exercise in-doors, if he takes it at all, and it implies an imperfect ventilation. He lives also beneath a sky calculated rather to depress than elevate his spirits, and in a climate where the disease which he hopes to escape or control is very frequent, instead of in one where, to use a most guarded expression, it is very much less frequent.' A resort to a mild, equable climate, admitting of constant out-door exercise, is enjoined in all cases that are practicable, particularly in the case of the young, in whom the lung disease is in the course of development. 'In most cases of phthisis,' says our author, 'where the disorganisation is circumscribed and not extensive, and the general and local symptoms shew that there is no immediate tendency to active advancement, great confidence may in these days of easy travelling be placed in a removal to a suitable climate; whether to give the opportunity of employing other remedies, such as cod-liver oil, to prolong life, or to cure.' Care, however, should be taken to avoid those places of fashionable resort abroad, where arrangements for health are constantly broken in upon by picnic and sketching parties, visits to cold ruins, marble-paved museums and churches, not to speak of balls and overcrowded soirées. Instead of falling into these snares, the writer before us strongly recommends consumptive patients to 'go to some such

\* *Change of Climate, considered as a Remedy in Dyspeptic, Pulmonary, and other Chronic Affections, &c.* By D. J. T. Francis, M.D. 1 vol. Churchill, London. 1833.

place as Malaga, and others of the Spanish coast towns, Algiers, &c., where there are few æsthetic lions, but where the climate, country, and people afford the main attractions.'

Previous to deciding on any particular locality abroad, it will be proper to consider whether a sedative and relaxing, or a tonic and bracing, climate is required. 'Madeira is a good climate, and Nice is a good climate, but each of these is good in different cases.' Referring our readers to the work of Dr Francis for special information on these and other points, we may confine attention to a few of the localities that seem to offer attractions to the general invalid, or to those who desire to reinvigorate a somewhat depressed state of the system. In order to arrest the progress of decay in the physical powers, towards the decline of life, nothing is so effectual as to spend one or two winters in a mild climate, with an agreeable change of scene. The effect of such a step is sometimes the enjoyment of a fresh series of years, when decay had seemed inevitable.

Of all the places which invite the residence of invalids and persons needing renovation, none is described in such fascinating terms as Malaga, in Spain, on the shore of the Mediterranean, at a moderate distance from Gibraltar. In this charming spot, according to Dr Francis, 'winter can hardly be said to exist; a perpetual spring, during which vegetation proceeds unchecked, connecting the autumn of one year with the summer of the next. The natives, fully alive to the delicious character of their climate, spend a large portion of their lives, and seek their amusements in the open air; whilst many of the poor, the whole year through, care for no other bed than such as they can spread after nightfall upon the public walks.' One of the causes of this peculiar mildness is the shelter afforded to the town and neighbourhood by a series of lofty vine-clad mountains on the north, east, and west, leaving a fine exposure to the south. The newer portions of the town approach the sandy shore of the Mediterranean. 'Through the centre of this latter quarter runs the Alameda, a noble promenade, between forty and fifty yards wide, planted with acacias, and adorned with statues and fountains. On either side of the walk are houses conspicuous for their cheerful appearance and elegance. The little plain, or Vega as it is locally called, at the south-east extremity of which Malaga lies, is a succession of gentle undulations, gradually rising towards the mountains, and forms one continued garden of oranges and lemons, palms, corn, almonds, figs, olives, and other choice productions of these climates. Its soil is partly alluvial and partly sandy: there are no standing waters; and it is worthy of remark, that, unlike many similarly situated tracts of land in Spain, there is here no general system of irrigation, which, however favourable to vegetable production, is decidedly objectionable in a sanitary point of view. . . . From what has now been said, one might fairly predict, that the situation of Malaga would be favourable to the production of that mild and healthy climate which is, in reality, found to exist there. The great attractions of its landscapes, moreover—a well-broken shore; numerous ranges of mountains, reaching from the lowly vine-slope to the stupendous sierras of Granada; a wide expanse of sea, bounded by the distant outline of the Barbary mountains; and the sunny plain itself, abounding in pleasant groves and gardens, provide another element in what is required by foreign visitors of such places. The walks and drives, also, are both numerous and varied; and it will be observed of Malaga, as of most other Spanish towns, that you can ramble forth into the country without being hemmed in by those long lanes of high stone-walls, which so hopelessly obstruct the view in the neighbourhood of many of the towns of Provence and Italy.'

The climate of Malaga is less subduing in its

influence than that of Madeira or Rome, and less stimulating and bracing than that of Nice. The mean annual temperature is 66 degrees; its mean winter temperature is 54 degrees. The mildness of its climate is obtained from the fact, that the temperature of the month of January in Malaga corresponds with that of May in London, and with June in Edinburgh. The mean annual range of temperature is 49 degrees; the mean daily range only 4 degrees—a wonderful equability. The dryness of the air is also remarkable. Rain is of rare occurrence; for months together not a drop falls; altogether, rain is seen only on forty days in the year. In this singularly beautiful climate, ice is unknown, except as an article imported by confectioners; no frost ever occurs to mar the hopes of the gardener. 'The vegetation of Europe,' proceeds our authority, 'may be fairly said to attain its culminating point at Malaga and the strip of coast country extending thence in an easterly direction. At Velez Malaga in this locality is the favoured spot, the only one, I believe, on the continent of Europe, where the sugar-cane not only flourishes in the open air, but has long been a plant of extensive and profitable cultivation. The same may be said of cotton, which is grown at Motril.' The general vegetation is exuberant, and of enchanting beauty. 'Throughout the winter, hedges of geraniums, as common there as the quickset with us, continue to blossom upon the public walks, where they flourish with weed-like luxuriance.' The earliness of the seasons would surprise visitors from northern climes. Wheat is seen in full ear in the middle of April, and is usually cut in the middle of May.

The general salubrity of the air, coupled with the abundance and cheapness of food, produces a healthy and long-lived population. Besides phthisis, the ailments remedied by a residence in Malaga are bronchitis, asthma, laryngitis, rheumatism, dyspepsia, scrofula, and general delicacy of constitution. Good lodgings are to be had; there is an English hotel on the Alameda; and as for conveyance, there is a frequent steam communication with England. To those who desire to enjoy perpetual sunshine under a bright and cheerful sky, perhaps no spot on earth could be so confidently recommended as Malaga.

As a variety in point of temperature and other qualities, Torre Molinos, Alhaurin, and Ronda, at a moderate distance from Malaga, are favourably spoken of by Dr Francis. Other places in Spain are enumerated as suitable to certain classes of invalids, the comparative absence of humidity being a peculiarity of nearly the whole. The only drawback to shifting about from place to place in the peninsula, as is well known, is the absence of good conveyances and good roads; the country in these respects being still in a primitive condition. From the coast of Spain and from Marseille, a voyage by steam to Algiers is now of easy accomplishment. The climate of Algiers and its neighbourhood is described as possessing at least one remarkable property; but this we leave the curious to discover from a perusal of the work of Dr Francis. Algiers, we are told, has been vastly improved by the French, and it now abounds in all the elegances and comforts of Paris, including good hotels and means for recreation.

In conclusion, the doctor presents an inviting account of various watering-places on the French side of the Pyrenees. Among these, Eaux Bonnes, to which it has been proposed the Empress of the French is to adjourn, occupies a leading place. It is situated at the height of 2000 feet above the level of the sea, amidst rich and picturesque scenery, and possesses an atmosphere remarkably pure and fresh. The waters are warm and sulphureous, and, drunk in moderate quantities, they are mildly stimulating in their effects, and well adapted for children and delicate persons. The accommodation at Eaux Bonnes is of the best

kind; and the walks among the hills are charming. It may be added, that this place, like Pau and other resorts at the base of the Pyrenees, can now be nearly reached by the railways through France. The line arranged to proceed from Bordeaux to Toulouse and the Rhône, will open them completely up to travellers; soon they may be as easily visited as Aix-la-Chapelle or Wiesbaden.

We take leave of Dr Francis with the best wishes for the success of his interesting and useful production.

### IBIS-SHOOTING IN THE SWAMPS OF LOUISIANA.

THE ibis (*tantalus*) is one of the most curious and interesting of American birds: it is a creature of the warm climates, and is not found in either the northern or middle States—the tropics, and the countries contiguous to them, are its range. Louisiana, from its low elevation, possesses almost a tropical climate; and the ibis, of several varieties, is to be there met with in considerable numbers.

There are few sorts of game I have not followed with horse, hound, or gun; and, among other sports, I have gone ibis-shooting: it was not so much for the sport, however, as that I wished to obtain some specimens for mounting. An adventure befell me in one of these excursions that may interest the reader. The southern part of the state of Louisiana is one vast labyrinth of swamps, bayous, and lagoons. These bayous are sluggish streams that glide sleepily along, sometimes running one way and sometimes the very opposite, according to the season. Many of them are outlets of the great Mississippi, which begins to shed off its waters more than 800 miles from its mouth. These bayous are deep, sometimes narrow, sometimes wide, with islets in their midst. They and their contiguous swamps are the great habitat of the alligator and the fresh-water shark—the gar. Numerous species of water and wading fowl fly over them, and plunge through their dark tide. Here you may see the red flamingo, the egret, the trumpeter-swan, the blue heron, the wild-geese, the crane, the snake-bird, the pelican, and the ibis; you may likewise see the osprey, and the white-headed eagle robbing him of his prey. These swamps and bayous produce abundantly fish, reptile, and insect, and are, consequently, the favourite resort of hundreds of birds which prey upon these creatures. In some places, the bayous form a complete net-work over the country, which you may traverse with a small boat in almost any direction; indeed, this is the means by which many settlements communicate with each other. As you approach southward towards the Gulf, you get clear of the timber; and within some fifty miles of the sea, there is not a tree to be seen.

It was near the edge of this open country I went ibis-shooting. I had set out from a small French or Creole settlement, with no other company than my gun; even without a dog, as my favourite spaniel had the day before been bitten by an alligator while swimming across a bayou. I went of course in a boat, a light skiff, such as is commonly used by the inhabitants of the country.

Occasionally using the paddles, I allowed myself to float some four or five miles down the main bayou; but as the birds I was in search of did not appear, I struck into a 'branch,' and sculled myself up stream. This carried me through a solitary region, with marshes stretching as far as the eye could see, covered with tall reeds. There was no habitation, nor ought that betokened the presence of man. It was just possible that I was the first human being who had ever found a motive for propelling a boat through the dark waters of this solitary stream. As I advanced, I fell in with my game; and I succeeded in bagging several, both of the great wood-ibis and the white species. I also shot

a fine white-headed eagle (*Falco leucocephalus*), which came soaring over my boat, unconscious of danger. But the bird which I most wanted seemed that which could not be obtained. I wanted the scarlet ibis.

I think I had rowed some three miles up-stream, and was about to take in my oars and leave my boat to float back again, when I perceived that, a little further up, the bayou widened. Curiosity prompted me to continue; and after pulling a few hundred strokes further, I found myself at the end of an oblong lake, a mile or so in length. It was deep, dark, marshy around the shores, and full of alligators. I saw their ugly forms and long serrated backs, as they floated about in all parts of it, hungrily hunting for fish and eating one another; but all this was nothing new, for I had witnessed similar scenes during the whole of my excursion. What drew my attention most, was a small islet near the middle of the lake, upon one end of which stood a row of upright forms of a bright scarlet colour: these red creatures were the very objects I was in search of. They might be flamingoes: I could not tell at that distance. So much the better, if I could only succeed in getting a shot at them; but these creatures are even more wary than the ibis; and as the islet was low, and altogether without cover, it was not likely they would allow me to come within range: nevertheless, I was determined to make the attempt. I rowed up the lake, occasionally turning my head to see if the game had taken the alarm. The sun was hot and dazzling; and as the bright scarlet was magnified by refraction, I fancied for a long time they were flamingoes. This fancy was dissipated as I drew near. The outlines of the bills, like the blade of a sabre, convinced me they were the ibis; besides, I now saw that they were only about three feet in height, while the flamingoes stand five. There were a dozen of them in all. These were balancing themselves, as is their usual habit, on one leg, apparently asleep, or buried in deep thought. They were on the upper extremity of the islet, while I was approaching it from below. It was not above sixty yards across; and could I only reach the point nearest me, I knew my gun would throw shot to kill at that distance. I feared the stroke of the sculls would start them, and I pulled slowly and cautiously. Perhaps the great heat—for it was as hot a day as I can remember—had rendered them torpid or lazy. Whether or not, they sat still until the cut-water of my skiff touched the bank of the islet. I drew my gun up cautiously, took aim, and fired both barrels almost simultaneously. When the smoke cleared out of my eyes, I saw that all the birds had flown off except one, that lay stretched out by the edge of the water. Gun in hand, I leaped out of the boat, and ran across the islet to bag my game. This occupied but a few minutes; and I was turning to go back to the skiff, when, to my consternation, I saw it out upon the lake, and rapidly floating downward! In my haste I had left it unfastened, and the bayou current had carried it off. It was still but a hundred yards off, but it might as well have been a hundred miles, for at that time I could not swim a stroke.

My first impulse was to rush down to the lake, and after the boat; this impulse was checked on arriving at the water's edge, which I saw at a glance was fathoms in depth. Quick reflection told me that the boat was gone—irrecoverably gone!

I did not at first comprehend the full peril of my situation; nor will you. I was on an islet, in a lake, only half a mile from its shores—alone, it is true, and without a boat; but what of that? Many a man had been so before, with not an idea of danger. These were first thoughts, natural enough; but they rapidly gave place to others of a far different character. When I gazed after my boat, now beyond recovery—when I looked around, and saw that the lake lay in the middle of an interminable swamp, the shores of which, even could I have reached them, did not seem to promise



me footing—when I reflected that, being unable to swim, I could not reach them—that upon the islet there was neither tree, nor log, nor bush; not a stick out of which I might make a raft—I say, when I reflected upon all these things, there arose in my mind a feeling of well-defined and absolute horror.

It is true I was only in a lake, a mile or so in width; but so far as the peril and helplessness of my situation were concerned, I might as well have been upon a rock in the middle of the Atlantic. I knew that there was no settlement within miles—miles of pathless swamp. I knew that no one could either see or hear me—no one was at all likely to come near the lake; indeed, I felt satisfied that my faithless boat was the first keel that had ever cut its waters. The very tameness of the birds wheeling round my head was evidence of this. I felt satisfied, too, that without some one to help me, I should never go out from that lake: I must die on the islet, or drown in attempting to leave it.

These reflections rolled rapidly over my startled soul. The facts were clear, the hypothesis definite, the sequence certain; there was no ambiguity, no supposititious hinge upon which I could hang a hope; no, not one. I could not even expect that I should be missed and sought for: there was no one to search for me. The simple *habitans* of the village I had left knew me not—I was a stranger among them: they only knew me as a stranger, and fancied me a strange individual; one who made lonely excursions, and brought home bunches of weeds, with birds, insects, and reptiles, which they had never before seen, although gathered at their own doors. My absence, besides, would be nothing new to them, even though it lasted for days: I had often been absent before, a week at a time. There was no hope of my being missed.

I have said that these reflections came and passed quickly. In less than a minute, my affrighted soul was in full possession of them, and almost yielded itself to despair. I shouted, but rather involuntarily than with any hope that I should be heard; I shouted loudly and fiercely: my answer—the echoes of my own voice, the shriek of the osprey, and the maniac laugh of the white-headed eagle.

I ceased to shout, threw my gun to the earth, and tottered down beside it. I have been in a gloomy prison, in the hands of a vengeful guerilla banditti, with carbines cocked to blow out my brains. No one will call that a pleasant situation—nor was it so to me. I have been lost upon the wide prairie—the land-sea—without bush, break, or star to guide me—that was worse. There you look around; you see nothing; you hear nothing: you are alone with God, and you tremble in his presence; your senses swim; your brain reels; you are afraid of yourself; you are afraid of your own mind. Deserted by everything else, you dread lest it, too, may forsake you. There is horror in this—it is very horrible—it is hard to bear; but I have borne it all, and would bear it again twenty times over rather than endure once more the first hour I spent on that lonely islet in that lonely lake. Your prison may be dark and silent, but you feel that you are not utterly alone; beings like yourself are near, though they be your jailers. Lost on the prairie, you are alone; but you are free. In the islet, I felt that I was alone; that I was not free: in the islet, I experienced the feelings of the prairie and the prison combined.

I lay in a state of stupor—almost unconscious; how long I know not, but many hours I am certain: I knew this by the sun—it was going down when I awoke, if I may so term the recovery of my stricken senses. I was aroused by a strange circumstance: I was surrounded by dark objects of hideous shape and hue—reptiles they were. They had been before my eyes for some time, but I had not seen them. I had only a sort of dreamy consciousness of their presence; but I heard them at length: my ear was in better tune, and the

strange noises they uttered reached my intellect. It sounded like the blowing of great bellows, with now and then a note harsher and louder, like the roaring of a bull. This startled me, and I looked up and bent my eyes upon the objects: they were forms of the *crocodilidae*, the giant lizards—they were alligators.

Huge ones they were, many of them; and many were they in number—a hundred at least were crawling over the islet, before, behind, and on all sides around me. Their long gaunt jaws and channeled snouts projected forward so as almost to touch my body; and their eyes, usually leaden, seemed now to glare.

Impelled by this new danger, I sprang to my feet, when, recognising the upright form of man, the reptiles scuttled off, and plunging hurriedly into the lake, hid their hideous bodies under the water.

The incident in some measure revived me. I saw that I was not alone: there was company even in the crocodiles. I gradually became more myself; and began to reflect with some degree of coolness on the circumstances that surrounded me. My eyes wandered over the islet; every inch of it came under my glance; every object upon it was scrutinised—the moulted feathers of wild-fowl, the pieces of mud, the fresh-water mussels (*unios*) strewn upon its beach—all were examined. Still the barren answer—no means of escape.

The islet was but the head of a sand-bar, formed by the eddy—perhaps gathered together within the year. It was bare of herbage, with the exception of a few tufts of grass. There was neither tree nor bush upon it—not a stick. A raft indeed! There was not wood enough to make a raft that would have floated a frog. The idea of a raft was but briefly entertained; such a thought had certainly crossed my mind, but a single glance round the islet dispelled it before it had taken shape.

I paced my prison from end to end; from side to side I walked it over. I tried the water's depth; on all sides I sounded it, wading recklessly in; everywhere it deepened rapidly as I advanced. Three lengths of myself from the islet's edge, and I was up to the neck. The huge reptiles swam around, snorting and blowing; they were bolder in this element. I could not have waded safely ashore, even had the water been shallow. To swim it—no—even though I swam like a duck, they would have closed upon and quartered me before I could have made a dozen strokes. Horrified by their demonstrations, I hurried back upon dry ground, and paced the islet with dripping garments.

I continued walking until night, which gathered around me dark and dismal. With night came new voices—the hideous voices of the nocturnal swamp; the *qua-qua* of the night-heron, the screech of the swamp-owl, the cry of the bittern, the *el-l-uk* of the great water-toad, the tinkling of the bell-frog, and the chirp of the savanna-cricket—all fell upon my ear. Sounds still harsher and more hideous were heard around me—the plashing of the alligator, and the roaring of his voice; these reminded me that I must not go to sleep. To sleep! I durst not have slept for a single instant. Even when I lay for a few minutes motionless, the dark reptiles came crawling round me—so close that I could have put forth my hand and touched them.

At intervals, I sprang to my feet, shouted, swept my gun around, and chased them back to the water, into which they betook themselves with a sullen plunge, but with little semblance of fear. At each fresh demonstration on my part they shewed less alarm, until I could no longer drive them either with shouts or threatening gestures. They only retreated a few feet, forming an irregular circle round me. Thus hemmed in, I became frightened in turn. I loaded my gun and fired: I killed none. They are impervious to

a bullet, except in the eye, or under the forearm. It was too dark to aim at these parts; and my shots glanced harmlessly from the pyramidal scales of their bodies. The loud report, however, and the blaze frightened them, and they fled, to return again after a long interval. I was asleep when they returned; I had gone to sleep in spite of my efforts to keep awake. I was startled by the touch of something cold; and half-stifled by a strong musky odour that filled the air. I threw out my arms; my fingers rested upon an object slippery and clammy: it was one of these monsters—one of gigantic size. He had crawled close alongside me, and was preparing to make his attack; as I saw that he was bent in the form of a bow, and I knew that these creatures assume that attitude when about to strike their victim. I was just in time to spring aside, and avoid the stroke of his powerful tail, that the next moment swept the ground where I had lain. Again I fired, and he with the rest once more retreated to the lake.

All thoughts of going to sleep were at an end. Not that I felt wakeful; on the contrary, wearied with my day's exertion—for I had had a long pull under a hot tropical sun—I could have lain down upon the earth, in the mud, anywhere, and slept in an instant. Nothing but the dread certainty of my peril kept me awake. Once again before morning, I was compelled to battle with the hideous reptiles, and chase them away with a shot from my gun.

Morning came at length, but with it no change in my perilous position. The light only shewed me my island prison, but revealed no way of escape from it. Indeed, the change could not be called for the better, for the fervid rays of an almost vertical sun burned down upon me until my skin blistered. I was already speckled by the bites of a thousand swamp-flies and mosquitoes, that all night long had preyed upon me. There was not a cloud in the heavens to shade me; and the sunbeams smote the surface of the dead bayou with a deadly intensity. Towards evening, I began to hunger; no wonder at that: I had not eaten since leaving the village settlement. To assuage thirst, I drank the water of the lake, turbid and slimy as it was. I drank it in large quantities, for it was hot, and only moistened my palate without quenching the craving of my appetite. Of water there was enough; I had more to fear from want of food.

What could I eat? The ibis. But how to cook it? There was nothing wherewith to make a fire—not a stick. No matter for that. Cooking is a modern invention, a luxury for pampered palates. I divested the ibis of its brilliant plumage, and ate it raw. I spoiled my specimen, but at the time there was little thought of that: there was not much of the naturalist left in me. I anathematised the hour I had ever imbibed such a taste; I wished Audubon, and Buffon, and Cuvier, up to their necks in a swamp. The ibis did not weigh above three pounds, bones and all. It served me for a second meal, a breakfast; but at this *déjeuner sans fourchette* I picked the bones.

What next? starve? No—not yet. In the battles I had had with the alligators during the second night, one of them had received a shot that proved mortal. The hideous carcass of the reptile lay dead upon the beach. I need not starve; I could eat that. Such were my reflections. I must hunger, though, before I could bring myself to touch the musky morsel. Two more days' fasting conquered my squeamishness. I drew out my knife, cut a steak from the alligator's tail, and ate it—not the one I had first killed, but a second; the other was now putrid, rapidly decomposing under the hot sun: its odour filled the islet.

The stench had grown intolerable. There was not a breath of air stirring, otherwise I might have shunned it by keeping to windward. The whole atmosphere of the islet, as well as a large circle around it, was impreg-

nated with the fearful effluvia. I could bear it no longer. With the aid of my gun, I pushed the half-decomposed carcass into the lake; perhaps the current might carry it away. It did: I had the gratification to see it float off. This circumstance led me into a train of reflections. Why did the body of the alligator float? It was swollen—inflated with gases. Ha!

An idea shot suddenly through my mind, one of those brilliant ideas—the children of necessity. I thought of the floating alligator, of its intestines—what if I inflated them? Yes, yes! buoys and bladders, floats and life-preservers! that was the thought. I would open the alligators, make a buoy of their intestines, and that would bear me from the islet!

I did not lose a moment's time; I was full of energy: hope had given me new life. My gun was loaded—a huge crocodile that swam near the shore received the shot in his eye. I dragged him on the beach; with my knife I laid open his entrails. Few they were, but enough for my purpose. A plume-quill from the wing of the ibis served me for a blow-pipe. I saw the bladder-like skin expand, until I was surrounded by objects like great sausages. These were tied together, and fastened to my body, and then, with a plunge, I entered the waters of the lake, and floated downward. I had tied on my life-preservers in such a way that I sat in the water in an upright position, holding my gun with both hands. This I intended to have used as a club in case I should be attacked by the alligators; but I had chosen the hot hour of noon, when these creatures lie in a half-torpid state, and to my joy I was not molested. Half an hour's drifting with the current carried me to the end of the lake, and I found myself at the debouchure of the bayou. Here, to my great delight, I saw my boat in the swamp, where it had been caught and held fast by the sedges. A few minutes more, and I had swung myself over the gunwale, and was sculling with eager strokes down the smooth waters of the bayou.

#### MINING-LADDERS AND MAN-MACHINES.

It is scarcely conceivable, except by those who have actually witnessed it, that nearly all our miners descend to and ascend from their work by ordinary ladders. The fatigue is so enormously great—the waste of flesh, mental energy, and animal spirits so grievous—the danger of serious accidents so imminent—that it is quite an opprobrium to the mechanical skill and the practical good sense of our age, that such a system should so long have been maintained. But there is a good agency now at work, from which better things may be expected.

Let us see what is the malady, before discussing the proposed cure. Suppose an elevated spot, four or five times as high as St Paul's in London, or two or three times as high as Arthur's Seat at Edinburgh; suppose that workmen have to ascend to that spot to their daily work; suppose there to be no means of ascent or descent except by nearly vertical ladders; and suppose the entire ascent and descent to be necessarily included in each man's daily labour—then will our supposition enable us to judge the kind of exertion required from hundreds or perhaps thousands of the Cornish miners. Some of the workings in these mines approach 2000 feet in depth; but these deepest, as well as the shallowest workings, are both reached by ladders. The ladders are in lengths of twenty or thirty feet, and at the bottom of each portion is a resting-platform; the whole together thus forming a zigzag from top to bottom of the mine. One reason why so few persons except miners ever descend into mines, is the terrible mode of ascent and descent; but this is a small matter, compared with the interests of the miners themselves. In the Cornwall Polytechnic Society's Second Annual Report, the waste of muscular force is thus strikingly



enunciated:—Suppose a man to weigh 160 pounds: in ascending 260 fathoms (the depth twenty years ago of the Consolidated Mines, that are still deeper now) in one hour, which is below the average computation, he exerts a constant force equivalent to that required in raising 4160 pounds one foot in a minute, or rather more than one-eighth of a horse-power; and supposing one-third of this force to be expended in the descent, we come to the result, that one-third of his whole physical strength is exhausted in going to and returning from his work. Taking a fair average of the deep and the shallow mines, it is considered to be not far from the truth, that one-fifth of all the muscular power of all the Cornish miners is thus expended. The waste of power is not all: there is the injury to general health, and there is the recurrence of frequent accidents by falling off the ladders.

At various times prizes were offered by the Polytechnic Society, and by individuals, for the best plan of ascending and descending mines; and this produced many useful hints. In the meantime, it was ascertained that the Harz miners had forestalled us in this matter. Some of these mines are 2000 feet deep; and the ascent and descent were wholly by ladders until 1833, when an accident suggested a new method. The pumping apparatus for one of the mines having been rendered unnecessary by the cutting of an adit, the idea occurred to some one of employing the pump-rods in aiding the ascent of the miners. The rods were of wood, seven inches by six, strengthened by iron. A portion of 100 fathoms was first tried; this was divided into twenty-two portions, and in each portion iron steps were fixed, at intervals of four feet: there were also hand-holds fixed at convenient distances. A reciprocating motion of about four feet was given to each rod; and the miners stepped to and fro from a bracket or ledge on one rod to the parallel one on the other. As one rod is always descending while the other ascends, and *vice versa*, it is easy to see how this alternate stepping on to the little platforms would lead to the ascent or descent of the miner. At the division between each two of the twenty-two portions, there was a larger platform, on which the miner might rest a while. This first attempt proved so acceptable to the men, they availed themselves of it so eagerly, that a new machine was made in another of the mines in 1836, and a third in 1838. In these machines, wood and wire-rope were combined in an ingenious way. Every one—owners, engineers, miners—seems to be highly satisfied with these contrivances, one of which descends to the vast depth of 2070 feet.

Mr Tregelles, a civil engineer, prepared, at the request of the Polytechnic Society, plans of this Harz machinery, suggested a few improvements, and made estimates of the probable expense. He shewed how 10,000 miners, by adopting the machine, might save £39,000 per annum, in the value of time alone, after paying every expense of constructing and working the machinery, and without reckoning anything for the avoidance of the waste of muscular power and injury to general health. After many plans had been suggested, and the inventors rewarded, the owners of Tresavean Mine announced their willingness to make use of one of the forms of apparatus to a depth of 24 fathoms, and to extend it to the entire depth of 280 fathoms (1680 feet), if successful. The expense for the whole depth was estimated at £1670. The society agreed to give £300 towards the expense of the first hundred fathoms, and £200 towards that of the second, after a trial of two months. The mine-owners accepted the offer, and set to work. By the beginning of 1842, they had carried the work to the depth of 27 fathoms; and Sir Charles Lemon and other amateur miners descended and ascended, much to the satisfaction of all concerned. The works went on so well, that this first English man-machine was considered to be better even

than those of the Harz. It took a long time to complete them; but by the autumn of 1843 they reached the very bottom, or near it, of the mine. The committee's report for that year is highly interesting; and Sir Charles Lemon, as chairman, said: '460 working-miners daily bless the society which projected this scheme, the adventurers who achieved it, and the engineer whose skill has rendered the experiment safe and successful. I hold in my hand a paper of very extraordinary interest: it is a memorial presented to this society, expressing, on the part of 391 working-miners of Tresavean—whose signatures are affixed—their gratitude for the exertions of the society to relieve them from their hitherto distressing and dangerous toil.' Sir Charles then read a simple, grateful letter from the miners. Then came an announcement which struck a commercial chord at once: the miners saved so much time and so much strength by the use of the machine, that they found themselves able to take the work on lower terms than before—thus directly benefiting the company without injuring themselves.

This apparatus resembles in principle that used at the Harz, but is more efficient in details. With the aid of the society, the United Mines Company put up a similar apparatus in 1845. The apparatus cost £2000; but the engineer of the mine estimated that it would all be paid in two or three years, in the saving of men's time alone. This agent, Captain Francis, said in a report to the society: 'The relief afforded to the miners by this machinery can scarcely be estimated; and can only be fully appreciated by those who, after having nearly their whole strength and spirits exhausted by working for eight hours, and even longer in some instances, in an atmosphere varying in temperature from 95 degrees to 105 degrees Fahrenheit, had formerly to climb to the surface by ladders. The amount of physical suffering which it alleviates is almost incalculable; and this benefit would of itself be full compensation for the outlay incurred in its erection; but the advantages, in a pecuniary point of view, which it affords, are equally striking.' In 1851, Captain Puckey supplied to the Fowey Consols Mine a very effective ascending apparatus, still more simple than the others. This apparatus works to a depth of 1680 feet. The rod is 8 inches square, with 12-inch platforms at intervals of 12 feet; and there are stationary platforms at the side of the shaft, equidistant. When a miner is about to descend, he steps on a rod platform—the rod descends, and carries him down twelve feet; he steps upon a fixed platform, while the rod rises again; he then steps upon another rod platform, and descends another space of twelve feet; and so on. Of course, in ascending, all this is reversed. At certain hours of the day and night, bodies of miners assemble to ascend and descend, passing each other in the shaft with great regularity. As one miner steps off the rod platform to one fixed platform, another steps on to it from another fixed platform on the other side; thus there are two streams of miners, so to speak, advancing along the same rod at the same time—one up, and the other down.

We will add a few words relating to iron and coal mines. Where the shaft of a mine is large and circular, quite vertical, and of not too great depth, the men sometimes ascend and descend on an iron platform. We have ourselves descended an iron-mine in one of the midland counties by this method, which is the most easy and secure of all, but possibly too expensive to be adopted in any but the best mines. The machine acts like the teagle or lift-apparatus at some of the great cotton-mills. The platform nearly touches the side of the pit, where it works up and down in vertical grooves.

Mr Fourdrinier has lately introduced a safety-apparatus for coal-mines. In the ordinary arrangement, if the rope breaks, the corve or basket will of course fall

to the bottom, and the men or the coal will fall with it. But by this new plan, the corve is made to slide in vertical grooves, provided with a catch or holdfast, so adjusted as to check the descent of the corve if the rope should break. If useful in the case of a basketful of coal, it would be equally so in that of a basketful of miners. Mr Fourdrinier, in his first attempt in the Staffordshire Collieries, used guide-chains instead of grooved timbers or iron rods. Most of the larger mines have guide-rods, simply to keep the basket from swinging to and fro during its ascent and descent; and the new apparatus can be applied to these same rods. The baskets are drawn up and down with great velocity in the coal-mines, so that any retentive apparatus becomes all the more important in case of breakage of the rope. Mr Nicholas Wood stated to a committee of the House of Lords, in 1849, that at Usworth Colliery the baskets ascend 1000 feet in a minute; that the Fourdrinier apparatus has been successfully applied; and that if the rope be even purposely cut, the basket can be checked in its descent almost instantly by the apparatus. Although not yet extensively used, Mr Fourdrinier's apparatus appears to be unquestionably an advance on the previous system.

## ALLAN RAMSAY AND JOHN GAY.

AN IMAGINARY DIALOGUE.

Ramsay. WALK in, Mr Gay; walk in. Eh, but I'm blithe to see ye to-day. Walk in to the fire, sir, and—

Gay. A warm welcome! Were I your enemy, Mr Ramsay, I should suppose you meant in reality to heap coals of fire on my head.

R. I'm no such a Christian yet, sir. But I'm real glad to see ye; and I hope it don't prove me your enemy because I tell ye the truth.

G. And I'm proud to visit you, sir, and with all the hearty feeling due from one shepherd in the Bucolics to another—from Meliborus to Tityrus—from the poet of the *Shepherd's Week* to him of the *Gentle Shepherd*. And, welcome as your kindness has already made me, I'm sure I shall be all the more welcome, as bringing friendly inquiries and messages from Mr Pope and other friends, and, let me say, admirers.

R. That's just a grand speech, and ye'll be making me too proud for a bookseller before ye've done. And so Mr Pope was thinking of me? And when did ye leave London, Mr Gay? Ye'll be from Queensberry House just now? And did ye find me out easily?—though I'm well enough known here, for the matter of that—and then there's the sign, which it's hard for a poet to miss, seeing it upholds the immortal pair, Ben Jonson and Drummond. I'll warrant, ye'd no great trouble in hunting me out?

G. Not the least. The man who guided me—a cadie, as I think you call him—

R. Ay, cawdie; and so ye'd a cawdie to pilot ye here?

G. Yes; and as I was going to add, the man seemed to know all about you, and your business, and your poetry, and your prospects, and your connections, as indeed he did about every one else's, small and great, in the good city.

R. Ou ay; they're a set of pawky chieles. And he'd be telling ye no good of me, the drucken carle?

G. He told me no kind of harm of you, Mr Ramsay, unless you think it harm to tell me about your apprenticeship at the wig-maker's.

R. Ne'er a bit:

Born to nae lairdship, mair's the pity,  
Yet denizen of this fair city.

Na, na, I'm not to be angered by gibes about wig-making—

G. Nor am I the man to gibe you about it. My own youth was partly spent behind the counter—that of a

silk-mercer in the Strand—although I have the blood of the ancient Le Gays in my veins.

R. And so have I, man; so have I—that's to say, not of the Le Gays, but (quite as good, you'll allow) of the sild house of Dalhousie, besides a claim on the Douglasses themselves.

G. You've Derbyshire kindred, too, I believe, sir?

R. That I have. From Derbyshire came my mother's father to oversee Lord Hopetoun's mines in Crawford Muir. My father's father was a writer here, and with a stomach above wig-making. But what of that? Am I not now poet as well as bookseller? and with too plenty brains, I hope, to wince at recollections of a barber's block; for, ye ken—

The fabric of my mind,  
'Tis mair to mirth than grief inclined:  
I rather choose to laugh at folly,  
Than shew dislike by melancholy—  
Proud to be thought a comic poet,  
And let a judge of numbers know it—

like yourself, Mr Gay. You and I have more than once rowed in the same boat, as brother bards. If you've writ fables, I've writ rhyming tales; you've had many a fling at Whigs and Whiggery, and they say my homage (at the Easy Club) to the king owe the water has nigh put my craig in peril: and then again, as you have your play of the *Beggar's Opera* and your pastoral of the *Shepherd's Week*, so have I my pastoral play of the *Gentle Shepherd*. But your shepherds and mine differ a little.

G. More than a little. Yours are seriously and poetically presented, with all the sentiment and refinement proper to a classical performance, not without a large space being given, however, to the humours naturally incident to such a subject—much of the effect of which we Englishmen must lose, from our want of acquaintance with the peculiar dialect. My pastorals were writ in quite another mood, for they were merely designed as satires on those of Mr Ambrose Phillips, who—

R. Ou ay, I ken: the bard, as Mr Pope says—

The bard whom pilfered pastorals renown,  
Who turns a Persian tale for half-a-crown,  
Just writes to make his barrenness appear,  
And strains from hard-bound brains eight lines a year.

And yet you're the man whose pastorals Mr Tickell calls the finest in the language! Mr Tickell—save us!—who himself has writ so beautiful a ballad as *Colin and Lucy*, and so ought to know better.

G. I was saying that my own pastorals had no very high or poetical aim: my shepherdesses, as I warned the reader, are not to be found idly piping on oaken reeds, but milking the kine, tying up the sheaves, or driving the hogs to their sties—

R. Wow, but that would ill suit my 'gentle' Patie, or his Peggy.

G. No, indeed. My sort of shepherd is no baronet's heir, nor sprig of *Ambrosian* gentility; he sleeps not under myrtle shades—

R. Troth, and no more does mine. But ye'll be flinging at Mr Ambrose, not at Patie.

G. Mine sleeps under a hedge, and will gape by the yard and by the hour at Jack Pudding, in his party-coloured jacket, and Punch's feats, and the raree-shows at a village fair. My Colin Clout stands staring like an oaf, hungry and in love; while Marian, the parson's maid, warms his broth in a sooty pot (not without burning her red paws the while), and thickens the mess with crumbled bread, and makes it so savoury, that she has to beseech him—

Ah, love me more, or love thy pottage less.

Fancy your Jenny having to make any such appeal to Sir William Worthy's son. Mr Pope, by the way, is

curious to see Habbie's How, and judge for himself how far there is truth as well as poetry in your *dramatis personæ*.

R. Mr Pope will have stumbled often enough, I'm fearing, at some of those hard words used by Glaud and Symon. It'll have gone far to spoil his relish of the poem. Faith, I'd be glad, though, to take Mr Pope himself to the bonny Pentlands, and spend a lang summer's day, under a lift of unclouded blue, among the flowery holms and green braes of Habbie's How; while I explained to him all the words that need a glossary, and let him hear them spoken in the pure accent of the natives—whether barefoot lasses, spreading their clothes beside a 'trotting burnie;' or piping shepherds, tending their flock on the gowans; or an auld wife spinning at the sunny end of her green kailyard; or a pair of lyart noddles engaged in a crack about the price of black-cattle and wool—

G. You're right in supposing us puzzled by some of your lines; and, indeed, I as much as promised Mr Pope to learn from your own mouth the meaning of a few hundred such. Many a guess we've laughingly had at them—many a leap in the dark, which only left us floundering.

R. Eh, but that's fine! D'ye mind, now, any of the words that gar'd ye spang?

G. Spang?—spang? On my life, *that's* one of them.

R. And yet ye was talking just now, your own self, of a spang in the dark! Man, but yours is a short memory!

G. Pardon me, I said 'leap'—many a leap in the dark.

R. Leap or spang, a's anc. Come away; think of another.

G. Well, we had a long discussion as to the natural history of a tappit-hen—where that bird is to be met with, and whence its title?

R. Ha! ha! ha! The bird, said ye? Ye shall see and handle her this very day; and blithe I'd be were Mr Pope and Dr Swift of the party, and each should be welcome to a whole tappit-hen to his own cheek; and, properly stuffed, I warrant they'd make no bones of her.

G. Mr Pope's appetite is so small, that I question whether even your bracing air and your hearty hospitality would enable him to eat the platter clean of this *rara avis*.

R. And had he ne'er a tooth in his head, nor power to digest a grouse's wing, he might finish off the tappit-hen—just as one of your braw countrymen jovially says:

I cannot eat but little meat—  
My stomach is not good;  
But sure I think that I can drink  
With him that wears a hood.

G. Oho! so the hen's not a bird of the air, after all, but—

R. Just a quart-stoup, Scots.

G. And a hen's a hen with you, as with us?

R. Ye'll mean a howtowdy? Oo ay. But, hark'ee, Mr Gay: here's the new edition of the *Gentle Shepherd*; take it home with you, and mark all the troubles ye meet with in your pilgrimage, and we'll have a grand clearing off of them all at one sitting, over a howtowdy and a tappit-hen—which last, I promise ye, will not be filled with swats. Eh! and what's the matter now?

G. Swats, Mr Ramsay; and pray, what are they?

R. What are they? Man, it's singular, is swats.

G. Very singular, indeed. And what may its singularity portend?

R. Just small ale. But, come away to the window, Mr Gay—come away, quick. D'ye ken yon lady getting out of the sedan? Save us! she'll be coming up here, about poor Sir John Vanbrugh's unfinished comedy; but no, she's making for Sandy Macleod's, the goldsmith—

G. I believe we passed the same lady in the Canon-gate; and if so, it's the one pointed out by my cadie as Lady Eglintoun.

R. Right; the countess herself. We're grand friends ever since I dedicated my *magnum opus* to her; and, O man! but she's real taste in poetry. I mind her well as Miss Kennedy; but everybody knew her for the future countess, ever since the day that a hawk, with the earl's name on its bells, alighted on her shoulder, although there was a countess at the time.

G. They tell a story, too, I believe, about the earl's willingness to part with the latter in favour of her younger and six-feet-high successor.

R. Ye'll mean the earl's answer to old Sir Archy Kennedy; and it's a true story, as well's a good one. Ye see, that poor body—not but his verses are clever—Sir John Clerk of Penicuik, was one of Miss Susanna's suitors—in the number whereof Penelope was nothing to her—and had tried hard for Sir Archy's consent, and very nearly got it too. But Sir Archy happened to talk over the proposal with his old crony the earl, and says his lordship: 'Bide a wee, Sir Archy; my wife's unco sickly.' And Sir Archy did bide his time, and soon there was a funeral at the earl's, and after the funeral a wedding, at which Sir Archy figured as the auld earl's father-in-law. There's no woman in Edinburgh to compare with the countess, and only her own daughters come near her. And then her wit! it's just charming to talk with her—a thing I often do—for she loves books and poets all, and has paid me more than one compliment to prove it. Did ye ever hear of the basket of fruit she sent me?

G. Really, Mr Ramsay, my memory's short; and—possibly—you understand—

R. Oo ay; but it was just this—in return for the fruit, I sent her a stanza with this conceit:

Now, Priam's son, ye may be mute,  
For I can bauldly brag wi' thee;  
Thou to the fairest gave the fruit—  
The fairest gave the fruit to me.

G. Aha! to be sure, I do remember now. And—ahem!—was there not, by the by—ahem!—a malicious stanza writ by one of our English wits on the model of yours?

R. Ha! ha! ha! and why beat about the bush, man? If Mr Budgell had malice in writing it, I bear none when I think of it; and can quote it *ore rotundo*, with as good-will as I spout my own—

As Juno fair, as Venus kind,  
She may have been who gave the fruit;  
But had she had Minerva's mind,  
She'd ne'er have given't to such a brute.

G. It may be some consolation to know—though I see you are too merry over the matter to need it—that this said Mr Budgell, once an admired writer in the *Spectator*, is now notorious all over the town for spleen and the very gall of bitterness. Poor fellow, he lost twenty thousand pounds by the South-sea Bubble; and there I can feel for him, for I, too, lost just the same sum. But at least I'm not soured and savage, as he is. Mr Pope he has been pleased to lampoon of late; and, indeed, hardly a respectable name has escaped his insolence. But see—who's that grave gentleman taking off his hat to the countess? I should know his face—

R. And so should I, for the face of a —; but never mind, he's a double-faced fellow yon, and lets folk see only the best of the two, though *that's* none too handsome, at least to all who agree with me in

Well judging a sour heavy face  
Is not the truest mark of grace.

G. Surely I've seen him at Mr Pope's. Is it not Mr Erskine?



R. Ay, ay; James Erskine of Grange, or Lord Grange—one of the first Pharisees in broad Scotland, who thanks Heaven he is not as other folks are; while they may thank Heaven they're not as *he* is, if all tales be true. He's taken up the cause of the fellows who cry out against my circulating library, and declares I'm corrupting and ruining the people by lending out plays and story-books; and he's still doing his best with the provost and bailies to stop my doings. Well, he'd need of a character for morality from some means or other; for strange things are laid to his charge. It's thought there'll be a grand clash between him and his wife before long: it's been a cat-and-dog business for some time—and if he's got craft, she's got spirit, as one might expect in a daughter of Chiesly of Dalry. Between such a pair, things will be worse before they can be better.

G. And pray, sir, do many of the Edinburgh gentlemen support this opposition to your library?

R. Not enough, at anyrate, to gain their purpose. I've beaten them more than once already, angry and violent as they are; and I mean one of these days to build a theatre, and have plays acted in spite of them all. Some of them are poor envious poetasters, who grudge me my evergreens—some of them stiff, solemn 'professors,' what we call the 'godly plants of the Bowhead'—troth, the West Bow just swarms with such—and some others, hate me for not going along with their stupid Whiggery, and for loving better to sing from my heart, *The King shall enjoy his own again*, than to drawl through my nose *The Solemn League and Covenant*. Bitterly they have all along denounced the playactors at the old house in the Tennis Court, of whom Mr Dryden said:

With bonny *Blue cap* there they act all night,

For Scotch half-crowns—in English, threepence light;

and still worse have fared the performances in Carrubber's Close, under Signora Violante and Tony Alston, for whom I wrote a prologue, and whom the Society of High Constables have not ceased worrying yet. But this library of mine, Mr Gay, is doing wonders in favour of a theatrical taste; and I look to be toasted hereafter, for my part, in a Revolution of 'pious, glorious, and immortal memory.' Ye should see the demand there is—often under the rose, ye ken—for the so-called 'abominable stage-plays,' of which I keep a fine collection; and how my laddy this, and the respectable laird o' that, keep sending backwards and forwards for something of Steele's, or Congreve's, or your own. I suspect Lord Grange himself gets them in an under-hand way.

G. Mr Ramsay, why are the gentlemen at the Cross yonder making way so promptly for some one to pass? I see no one of quality coming.

R. I've no see yon shabby carle, though, with the hat owre his eyes?

G. Faith, I do—and the wide passage they one and all leave him. Who is it?

R. May ye never be closer acquant with him, sir! It's Jock Dalgleish, hangman and master of the ceremonies in the Grassmarket. He's small need, ye see, to sing out 'Noli me tangere' as he goes along. Even at the kirk, he's sure of a pew to himself; and if the poor body bides the sacrament, they give him a table to himself, too, after all good Christians have left the sanctuary. Jock's been a decent man in his time, and has mixed in good company; but he'll no do that again. We'll hope for him a better monument, though, than the Hangman's Craig.

G. And what may that be?

R. You and I'll have a walk in the King's Park, and ye'll see it for yourself. It's just a rock from which one of Jock's predecessors flung himself in despair: the man was a prodigal son, and had so wasted his goods, of which he once had plenty, that he was fain to

take this office, and get his bread by officiating at the gallows. But he could not forbear playing the gentleman whiles, and would go in good clothes and join the golfers on Brunsfield Links. Here he was found out one day, and driven off with hooting and curses. Next day, his corpse was found at the foot of what is since called the Hangman's Craig.—But there goes one who, they say, risks a close acquaintance with the executioner; you gray-haired—

G. Why, that's Lord Lovat, surely. Him with the Highlanders, you mean?

R. Ay, ay; Macshemus himself, with his gillies. How grim he looks, shaking that quiet chield Duncan Forbes by the hand! They're braw friends, though; and auld Simon does well to keep in with such as that Duncan body. Eh, the pawky auld double-dealer! only look to him, Mr Gay—look to him hugging and fondling one after another he meets, and they, most of them, feeling uncomfortable under the fifth rib.

G. Well, the day wears on, and I have an engagement to keep at Mrs Janet Hall's, who, by the by, keeps excellent claret—

R. All in good time for Jenny Ha's: sit ye down, man, and I'll call for the tappit-hen we spoke of. Save us! to think of your not knowing the tappit-hen, and you a dweller with the Queensberry folk. Tut, man, sit ye down: plenty time for your trysting at Jenny Ha's.

#### THE ATLANTIC BASIN.

For some years past, the United States government, following the example set by the governments of Europe, have been carrying on topographical, geological, astronomical, and marine surveys in and around their great country, the results of which have appeared in maps, charts, and reports, highly creditable to all concerned. The most important of all is perhaps the 'coast survey,' for without an accurate knowledge of the sea-board, the dangers of navigation are greatly multiplied. In the progress of the work, it was found desirable to extend the soundings to a greater distance from the shore than had at first been contemplated; and as increased knowledge brought wider views, the sanction of Congress was obtained for a project for running a line of soundings all across the Atlantic, by which, among other results, it was thought an idea would be gained of the form of the great ocean-basin. The schooner *Taney*, with competent officers and crew, was accordingly despatched on this novel service, the instructions being to ascertain 'the force and direction of the wind, the hourly state of the weather, and all the meteorological conditions connected therewith, as thermal, dynamical, barometrical, and the like: the force and set of currents, their depth and width, their temperature, and the position of their edges or limits: hourly observations upon the temperature of the surface-water: frequent observations upon the temperature of the ocean at various depths: deep-sea soundings: vigias (shoals), and all dangers about which there are doubts either as to existence or position: transparency and saltness, or the specific gravity of sea-water in the different parts of the ocean.' The true set of currents was to be ascertained by determining the variation of the compass three times a day; and during calms, currents were to be tried for by lowering boats and sinking weights; and under-currents to be detected by sounding every thirty miles with 100 fathoms of line; and the 'limits and set' of such currents, when discovered, were to be defined as accurately as possible. In the belt of calms known as the 'horse latitudes,' the barometrical observations were to be multiplied, and very particularly recorded, so as to test the value of the supposition which gives an increased atmospheric pressure to those regions as one of the consequences of the trade-winds. The search for supposed shoals and

dangers was not the least important part of the service, since, if only imaginary, their presence on the charts is a serious and positive inconvenience, causing the courses of vessels to be unnecessarily altered. Of such objects, eight were to be specially searched for, among them the 'False Bermudas'; and it may be stated here, that not one of them was found, although deep soundings were taken in the localities assigned to them. And last, the quantity of cloud visible, and the direction of its motion, was also to be the subject of daily observation.

The arrangements for deep-sea soundings were of the most complete description. Instead of hempen line, 14,300 fathoms of iron-wire were provided, weighing 3025 pounds. Of this, 7000 fathoms were wound on an iron cylinder, fitted to a wooden framework, and having a fly-wheel and pinions, to facilitate the labour of hauling up. With this apparatus, a sounding was taken in lat. 31°59 north, long. 58°34 west, in which the weight descended to 5700 fathoms—equal to 34,200 feet, or more than six miles; the time occupied in the descent being one hour and a half. The circumstances were eminently favourable—the sea perfectly calm; and as there had been no interruption in the sinking of the lead when the wire broke, it was believed that even then the greatest depth had not been reached. 'There was no change of position during the sounding, as proved by the observations: the great weight and extent of the wire penetrating to such profound depths, seemed to serve as an anchor to keep the little schooner steady.' In this sort of work, it would appear that the rise and fall of the ship is the great difficulty: even with a gentle heave the sounding-line is extremely liable to be broken, generally when between 1000 and 2000 fathoms have run out. This is one of the deepest soundings on record; that obtained by Sir James Ross in 1843, between Rio Janeiro and Ascension, when returning from his antarctic expedition, was 27,600 feet. But both are exceeded by that of Captain Deudham, taken in October 1852, when, between Rio and the Cape of Good Hope, more than eight miles of line were carried off the reel.

The observations made upon under-currents have led to the conclusion, that they are stronger than those of the surface; as only on two occasions were they found to be of less velocity than those flowing in a different direction above them. To test these currents, a large 'clip log,' loaded so as to swim in a perpendicular position, was sunk to 126 fathoms, and the attached line made fast to a 'barrega' (a small cask), to serve as a float; and by the movement of the latter, the direction and rate of the underlying current could be seen. 'It was wonderful, indeed,' says the commander of the *Taney*, 'to see this barrega move off against wind and sea and surface-current, at the rate of over one knot an hour, as was generally the case, and on one occasion as much as one and three-quarter knots. The men in the boats could not repress exclamations of surprise, for it really appeared as if some monster of the deep had hold of the weight below, and was walking off with it.' The detection and measurement of these submarine streams will do much towards adding to our knowledge of ocean phenomena. They appear to lie at depths varying from 50 to 100 fathoms; and it has been found possible, by careful contrivance, to measure their depth, independently of the water above and below them. What a view these facts open of a vast circulatory system in the sea!

During the cruise, the *Taney* more than once crossed that part of the Atlantic known as the *Mar de Sargasso* ever since the days of Columbus, and occupied by immense beds of floating weed; but though a diligent look-out was kept, the beds were not to be seen, nothing more being visible than long lines of the weed lying parallel in the direction of the wind. 'My frequent examinations of this weed,' observes the commander,

'satisfy me that, wherever it may originally come from, it feeds and grows upon the waters of the sea, which is certainly not more strange than the plant which feeds upon the air.'

Besides the observations above mentioned, the specific gravity of the water was noted at regular periods; and in the trials as to its transparency, seventeen fathoms were found to be the limit, the observers 'being able to see a large lead, painted white, at that depth.' The soundings were taken every 200 miles, on a line from New York to the Canaries and Cape de Verdes, both going and returning; and some interesting results were expected from an examination of the bottom over the volcanic region off Cape St Roque, and from thence to the mouth of the Amazon. But the *Taney* proved too small and unseaworthy for the service in which she was employed; and after a cruise of nine months, it was found necessary to put back to New York in June 1850. Since that time, the *Dolphin*, a larger and more efficient vessel, has been sent out; and on her return, we shall probably learn some definite particulars respecting the form of the basin in which rolls the mighty Atlantic.

In investigations of this nature, the more numerous the observations, the more trustworthy will be the data founded on them; and to make the inquiry as complete as possible, the ships of the United States navy are each supplied with from 15,000 to 20,000 fathoms of line, all carefully measured and marked, so that deep-sea soundings may be taken on all favourable occasions. A thirty-two-pound shot is used as a sinking-weight; and whenever the trouble of hauling up would be too great, the orders are to cut the line after noting the quantity which has run off the reel. Besides these, more than 1000 vessels of the mercantile marine, acting under instructions from the Washington Observatory, are, while prosecuting their voyages, keeping a record, three times a day, of winds, currents, calms, rains, storms, thunder and lightning, fog, cloud, and drift, temperature of air and water, and all other noteworthy natural phenomena. As soon as any one of these vessels returns from her voyage, the log, or a copy, is sent to the Observatory, by assistants appointed at several of the principal ports of the United States to collect the documents. By this means, information is obtained from the Atlantic, Pacific, and Indian Oceans; these being as yet the principal objects of investigation, from which wind, current, and track charts are constructed and published for the use of mariners. Another series denotes the trade-wind regions, including the calms and the monsoons. The 'tracks' have already been found eminently useful, vessels provided with them having left the Atlantic ports and made the voyage to San Francisco in a shorter time than ever before. The results shewed that, while American ships averaged 122 days, English ships took 167 days, French 182, and Dutch 190—facts which account for the eagerness manifested by practical navigators to obtain possession of the track-charts.

In the construction of the various charts, each five degrees of ocean are represented by engraved squares on the paper, within which concentric circles shew the direction of the wind; so that the direction in any part of the ocean for any month may be seen without difficulty. The number of times that the wind has varied and blown from any one of sixteen points of the compass, and the number of calms, are also indicated. 'The object has been,' to quote the Observatory Report, 'to get at least 100 observations for each month in every square of the ocean, which would require for the three great oceans 1,669,200 observations upon the direction of the winds alone.' For some regions, the observations are very numerous; in others, not one has been recorded, 'so limited and marked are the commercial paths over the ocean, according to the seasons. . . . Between the route to and fro around

Cape Horn, and the routes around the Cape of Good Hope, there is a part of the ocean of immense extent that is seldom traversed by any vessel.' Such regions can hardly be explored without despatching vessels for the special purpose. The charts already published, embrace the usual route from America to Europe, and down south as far as the parallel of Rio; and it appears that ordinary navigators, by studying them, may become as expert as the most experienced 'packet captains.'

Apart from the immediate practical interest attaching to these returns, they have a high philosophical value in their promise of clearing up what has so long been a profound subject of speculation and inquiry—the mystery of the deep. And now that our own government are about to unite with the Americans in promoting the great systematic survey, we may believe that the combined energies and resources of the two nations will, ere long, bring to light many new facts to help on their work.

#### ATTEMPTED EXPLANATIONS OF TABLE-MOVING.

You have been made aware that I now believe that the alleged facts, passing under the names of 'Table-moving' and 'Spirit-manifestations,' do take place, and not necessarily with any active or passive deception on the part of the experimentalists. Making this acknowledgment, you will observe, does not commit me to the expression of any opinion as to the causes of the facts. I see the facts, but meanwhile feel quite unprepared to draw them into any induction. It is worth while, however, to spend a little time in looking into the various attempts that have been made to give a rational theory on this curious and, I must admit, in the meantime very perplexing subject.

Let me first observe that, since my last notice, we have heard in London of several new modes of the manifestations. In many of our private circles, a hat placed on a table is preferred to the table itself. Some use a music-stool, and have great sport when the seat is made to screw itself out, and fall on the floor. In France, it appears, they have discovered that a child placed in the middle of a circle, and touched by the hands of the party, will be made to wheel about, exactly as a table does. Some, again, revert to the old experiments of the book suspended by a key, and a watch or ring hung by a thread or chain—a rather important variety of the experiments, as it opens the door to one of the most hopeful lines of rational explanation.

It is not more than two years since the apparent marvels of the suspended ring were explained, to the general satisfaction, as arising from an unconscious action of the will. The experimentalist found that, when he used a rest for his arm, those strange capricious oscillations which had surprised him so much, became gradually restricted in proportion as he moved the rest nearer to the point of suspension, until, when he placed it under his finger-ends, they ceased altogether. M. Chevreul, the celebrated French chemist, settled this question so long ago as 1833; but such mysteries every now and then undergo a resurrection, and have to be set asleep again. M. Chevreul had further ascertained that, while watching the oscillations of the pendulum, he himself became subject to a *tendance au mouvement*, corresponding in force with the range of the oscillations, but which ceased when he performed the experiment with bandaged eyes. In short, the whole matter seemed to depend on an unconscious movement in the mind of the operator; and thus it rests for the present.

On the basis of this explanation, a writer of marked ability in the *Leader* (weekly newspaper) has raised a theory for the interpretation of the table and hat moving phenomena. He says: 'In standing or sitting

round a table for many minutes, with the hands lightly resting on it, and the *wind eagerly expectant*, the fatigue of the muscles causes you to rest with your weight on one leg, if standing—on one side, if sitting—and this gives a stress to the table (unless you are very vigilant), which may cause it slightly to move: no sooner does the movement begin than all the expectant circle, now gratified at the result, unconsciously aid in the movement; and thus, although no one is conscious of effort, yet, in fact, all or most of the persons forming the chain do really co-operate in moving it.' He adds: 'One evening, two believers, an indifferent person, and the "terrible sceptic" who writes this, stood round a table, with fingers lightly resting on a hat. After about twelve minutes, the sceptic's hands were trembling slightly from tension of the muscles, and his legs becoming fatigued, he rested the main weight of his body on the right leg. Presently the hat began to move. We all asked each other: "Are you moving it?" and received a conscientious negative; nevertheless, the hat continued moving, with occasional pauses. The idea occurred to the sceptic, that as the hat was moving in the direction in which he leant, perhaps the slight stress so produced might be the cause of the moving; to test this, he changed from right to left leg. The hat stopped; presently it resumed its motion, but this time from left to right—that is, the reverse way! He was still perfectly unconscious of any effort to move the hat, although he felt convinced it was occasioned by the slight stress of his body: he suddenly stood erect on both legs, and the motion ceased. It never moved again during that evening.'

A correspondent of this paper, signing himself M. P. R., states that he tried some experiments with the book suspended by a key; and the result is certainly much in favour of the above explanation. The book being, as usual, we presume, tied upon a key, and the ring of the key upheld by the fingers of the experimenters, certain initials were mentioned, and it was found that at certain of these the book invariably turned. The writer resolved to think of a name, without communicating it to his associates, and see if the book would move when the proper letters were mentioned in an enumeration of those of the alphabet. 'I therefore,' says he, 'slowly called over the letters, thinking of names (all dead), no one knowing who I was thinking of, and, to my amazement, the book by turning spelt the names in every instance—in one, a deceased friend of mine, whose name had fifteen letters.' In a subsequent communication, M. P. R. gave the following, as a book-and-key experiment:—'I asked: How long is it since Mr — (a friend of mine) died? —and counted the figures. Answer correct; the book turning at the proper figure, as I named it, beginning at 1. Question 2. Are these revelations for good?—The book turned. 3. Will questions intended for evil purposes be answered?—Stationary. 4. Recollecting a letter in the *Leader* on the Spirit-rapping, I asked, will these revelations ever be made audibly?—The book turned. 5. In how many years?—I counted. Answer: two. 6. Will questions be answered relative to our worldly prosperity?—The book turned. 7. Will questions as to success in horse-racing be answered?—Stationary. 8. How long is it since — died?—The book turned at the right figure.' There was of course nothing here which might not be explained on the principle of *muscular action attendant on expectant attention*.

Is, then, this principle to be accepted as the all-sufficient explanation of the phenomena? Scarcely, I apprehend, for there are a few of these phenomena which, so far as I can at present see, go somewhat beyond the bounds of the explanation. It, for one thing, completely ignores the rappings. Well, the rappings, you say, take place only at Mrs Hayden's, who may, for anything you can tell, produce them with her foot?



Not so fast. I have heard the rappings take place in private circles; one of them in my own house, where I have every reason to put faith in the honour of the experimentalists. And even if it were not so, there are still difficulties in the way of receiving the answers as affected *always* by the will of one or more of the circle. For example, in a circle formed by two of my family, and a young female friend of theirs, a response came, indicating the spiritual presence of a brother of this third person. He had died from a distressing accident in his youth, six years ago, and his sister had bewailed his loss with an abiding grief. A communication to her being announced, we used the alphabet, and speedily we obtained the word 'follow.' All four of us were totally unconscious of having entertained any expectation of this or any other word. And now when the word had come, we all of us expected only some pious expression, such as is so common at Mrs Hayden's. It might be, we thought, 'Follow the ways of righteousness,' or, 'Follow the Lord always.' But no such thing came. We obtained the letters 'S, O,' and felt completely bewildered as to what was meant. It was, therefore, with a feeling of surprise that we received, in quick succession, two more letters, O, N, and suddenly found ourselves in possession of the affecting legend, FOLLOW SOON: the expression of a wish, as it were, on the part of the spirit, that he might speedily be rejoined in the land of shades by his beloved sister. The solemn effect of this communication on all present was something not to be speedily forgotten, whatever explanation may ultimately be given of the way and manner in which the words reached us.

How this experiment can be interpreted in conformity with the theory of will, consciously or unconsciously operating, is to me, I must say, inconceivable. Let the advocates of that theory make the attempt, and I will most patiently listen to them; but if they set the matter aside as not a fact, or a fact not correctly reported, then, I must say, that they will give my mind no satisfaction; for if I am not right in reporting this fact, I should expect to be proved incapable of reporting to so simple a matter as my having taken my breakfast this morning. The circumstances, I must respectfully repeat, were exactly as here stated.

Another case: A literary man of excellent understanding, though ardent temperament, was experimenting in his own parlour with a hat, which was touched solely by the fingers of his wife and son. He resolved to ask mentally the name of an individual who had died of the plague at Malta thirty-five years ago, and likewise, if successful in that question, to ask the cause of death. There was one other person present, and to him he imparted the name in a whisper, at a distant part of the room, that there might be something more than his own word for the success of the experiment, supposing it should prove successful. His friend wrote down the name *Crosbie*. The spirit assumed to be present was then asked the name of the person thought of, when the letters C, R, O, S, B, Y, were clearly announced, this being in reality the right spelling of the word. A number of diseases were then mentioned, that a signal might be given at the right one, and the plague, being mentioned eighth in the series, was affirmed in the distinctest manner.

It seems to me that these cases clearly stand, in regard to the will-theory, as exceptional phenomena. Observe, I do not despair of their being explained in some way short of the theory of spirits—to which I can consent to come only in the very last resort; but what I say is this: no theory of *expectant attention* seems to me capable of explaining a response in which no word or letter was expected, but in which something else, if anything, was looked for. I here allude particularly to the experiment where 'Follow soon' resulted. Most undoubtedly, in that case, the whole circumstances were such as, *a facie*, to bear but one possible construction

—namely, that an intelligence totally apart from the company was addressing it. And, viewing it as a fact which may have been repeated in many other houses, I cannot wonder that the phenomena have been regarded as spiritual communications. I cling, however, to the hope that some psychological explanation of a satisfactory nature will yet be given. There may be some profound subjectivity concerned in the case, arguing the existence of depths in our mental constitution far beyond what have hitherto been dreamed of.

Supposing that every effort at a mundane or secular explanation should fail, it may, after all, be asked: Is the *à priori* argument against spiritual communications quite insuperable? Is there anything more in it than simply this—that we are not accustomed to get intelligence from any but living beings? Grant that we are not in the habit of getting communications of this nature, are they certain, for that reason, never to take place? Above all, can we be justified in denying and repudiating obvious facts, because they point to a conclusion against which we have only these objections? While as determined as anybody to come to any feasible conclusion which makes spirits superfluous, I can scarcely join with those who appear as if it was absolutely impossible for them to be brought to admit that source of the intelligence. That the spirit of man survives his corporal life, is not a doctrine in disfavour amongst mankind: on the contrary, it is one which, even setting revelation aside, some internal principle prompts us to cling to. Surely the prospect of some experimental proof of the verity of this doctrine should not be very distressing to us. It would be curious indeed, as an illustration of the effect of habit, if the kind of instinctive assurance we have been accustomed to lean upon for this doctrine were to be maintained in full force while we coolly rejected a kind of assurance infinitely stronger in its character, but which came upon us as a novelty.

A. R.

[We have inserted the above merely to satisfy the curiosity of our readers; but must now decline taking any more notice of the subject till the phenomena in question are explained on rational principles.—Ed.]

#### CURIOSITIES OF AMERICAN ADVERTISING.

CARNOT, the French minister, used to organise victory for the armies of France from his bureau: he adopted the right means, and the right results followed. So the right results in business may be obtained by adopting the right means—namely, advertising. Palmer's advertising agency, Court Street, presents every facility for advertising in the best journals of the United States, Canada, &c. The beginning of the year is the time to organise a victory in trade.

KNOX IS OUT!—Not out of town, out of money, or out of spirits; but out with a new style of spring hats, the most elegant, beautiful, glossy and recherche article of the season. Fashionable men know this, and for a few days past he has had hard work to supply the demand. But 'go ahead' is the motto he has adopted, and it has placed him among the first of New York hatters.

A REFORMATION.—The man who attempted to smoke a pipe of brandy, and was troubled with dizziness of the brain, talks of joining the Daughters of Temperance. We saw him, last Tuesday, at Knox's hat establishment, No. 128 Fulton Street, selecting one of that popular tradesman's new and beautiful style of spring hats. He remarked that he was going to reform, and he desired a hat that would gain him admission to respectable society. He went to the right place to get such an article, and got one that was not only cheap and elegant in appearance, but durable.

It is expected the new administration will set all things to rights, and, as a matter of course, the people will buy their hats for spring. Freeman, the hatter, 90 Fulton Street, will be glad to see his friends, and supply them with his spring style, which cannot be surpassed for beauty or durability. Price 3 dollars, and 3 dollars 50 cents for a hat usually sold for 4 dollars.

'Tis distance lends enchantment to the view,' says Campbell. There are few things to which the line is more applicable than an ill-shaped, baggy, coarsely-made shirt. Nothing but distance can hide its vulgarity. At Green's, No. 1 Astor House, they make shirts that improve as you approach them, and defy the microscope to detect a blemish in them.

**BOARDERS WANTED.**—A middle-aged lady, who has once enjoyed the smiles of fortune, but who, from inevitable causes, has become somewhat reduced in her circumstances, proposes opening a respectable, not *genteel*, boarding-house in this city, provided she can obtain a limited number of boarders who can appreciate good living and are willing to pay for. Her house is new, convenient, and in a pleasant location—her table will be supplied with good substantial food, *well cooked*; athletic butter, equivocal eggs, promiscuous hash, malignant coffee, with consumptive milk, will be excluded—neither will she regale her guests with the grizzle of the patient ox, burnt up in his own tallow: having her regular grocer, milkman, and butcher—she is under no necessity of scouring the market to obtain articles half a cent per pound under price, which are '*good enough for boarders*.' Those who are willing to live on buckwheat cakes exclusively, will be charged half-price only, but will not be guaranteed against salt rheum and cancers; ginger snaps and hot water will be provided for those who wear false teeth, if required—but those who have sound teeth and healthy gums are advised to give this compound a wide berth—*comfort*, not *show*, being her aim. The kitchen will be looked into *occasionally* if the parlours get less furnishing; not having any male or female pets to clothe and feed out of her boarders, she will not be obliged to curtail in her table to meet such expenses; and having two ears with one tongue, will devote twice the time to hearing what her boarders wish that some do in talking away their appetites. What leisure she may have will be devoted more to her own personal cleanliness than ogling and smelling round boarders' rooms to find out their habits. Boarders' religious creeds and political opinions will form no part of her solicitude; and as she does not covet the marriage state, will not keep up a tiresome, toady gabble to some particular guest of eligible age and fortune. Those desirous of finding a home of this description, will please address Mrs Ann T. Mak Lean, at this office.

#### LOOK ON THIS PICTURE AND ON THAT.

'Father is coming!' and little round faces grow long, and merry voices are hushed, and toys are hustled into the closet, and mamma glances nervously at the door, and baby is bribed with a lump of sugar to keep the peace; and father's business-face relaxes not a muscle; and the little group huddle like timid sheep in a corner, and tea is despatched as silently as if speaking were prohibited by the statute-book, and the children creep like little culprits to bed, marvelling that the baby dare crow so loud, now that *Father has come*.—'Father is coming!' and bright eyes sparkle for joy, and tiny feet dance with glee, and eager faces press against the window-pane, and a bevy of rosy lips claim kisses at the door, and picture-books lie unrebuked on the table, and tops and balls and kites are discussed, and little Susy lays her soft cheek against the paternal whiskers with the most fearless *abandon*, and Charley gets a love-pat for his medal, and mamma's face grows radiant, and the evening paper is read (not silently, but aloud), and tea and toast and time vanish with equal celerity, for jubilee has arrived, and *Father has come*!—*Fanny Fern*.

#### DRESS OF THE FIRST DUKE OF BUCKINGHAM.

It was common with him, at any ordinary dancing, to have his clothes trimmed with great diamond buttons, and to have diamond hat-bands, cockades, and earrings to be yoked with great and manifold knots of pearl—in short, to be manacled, fettered, and imprisoned in jewels; inasmuch that, at his going once to Paris in 1625, he had twenty-seven suits of clothes, made the richest that embroidery, lace, silk, velvet, gold, and gems could contribute, one of which was a white uncut velvet, set all over, both suit and cloak, with diamonds valued at fourscore thousand pounds,

besides a great feather stuck all over with diamonds, as were also his sword, girdle, hat-band, and spurs.—*Harleian MS. quoted in the Dublin University Magazine.*

#### LINES BY WALLIN, THE SWEDISH POET:

WRITTEN A FEW HOURS BEFORE HIS DEATH.

REPOSE, O weary soul, in peace repose:  
Let thy last thoughts and cherished hopes ascend  
To that eternal home, where, in the end,  
A great light shall make clear what no man knows.  
Repose, my soul, repose!

Lie, weary arms, crossed meekly on my breast—  
Crossed meekly for a prayer in that dread hour.  
For now I strive to speak, and lack the power;  
Strength leaves me, and I draw near to my rest.  
Lie, crossed upon my breast.

Sleep, weary soul! Lo, thou hast struggled sore;  
But now behold the hour of peace is near—  
One loving thought for those who linger here,  
And then lie down and sleep, and strive no more.  
Lo, thou hast struggled sore!

W. M. T.

#### FLYING ON THE WATER.

We are glad to perceive that Mr Brown has not been idle since we last noticed his astounding project of crossing the Atlantic in forty-eight hours, and performing the journey to India and back in a fortnight; for we find that, besides perfecting his invention, and protecting it by patent-right, he has also found leisure to write a very spirited and interesting pamphlet to shew how this extraordinary feat is to be accomplished. Having carefully perused this treatise, we are bound, in justice to Mr Brown, to say, that he appears to have placed the subject beyond a mere matter of opinion. Nothing whatever is taken for granted, his arguments being all based on scientific data, without any attempt to exaggerate; the reasoning, too, is so logical, and couched in such popular phraseology, that it is impossible to resist the conclusion, that a tremendous speed may be obtained, at least on smooth water, by substituting the *flying* for the *floating* principle in sustaining ships when in motion. These principles are radically distinct—the former being exemplified by a bird or a boy's kite, and the latter by a fish or a balloon. How the waves of the sea might affect the invention, we are not prepared to say; but supposing it only to succeed on rivers and canals, it would still be one of the greatest achievements of the age, or, indeed, of any age. On the whole, the subject is one of great interest, particularly at the present moment, when such strenuous exertions are being made to increase the speed of steam-vessels; and for further information, as well as for an elucidation of the much mystified subject of mechanical flying, we must refer our readers to the pamphlet itself.—*Mining Journal*.

#### STONE-TREE.

There is a tree in Mexico called the *chijol*, a very fine wood, which, according to a writer in the *National Intelligencer* (W. D. Porter), becomes petrified after being cut, in a very few years, whether left in the open air or buried. From this timber, houses could be built that would in a few years become fire-proof, and last as long as those built of stone. The wood, in a green state, is easily worked; it is used in building wharfs, forts, &c., and would be very good as railway-sleepers, or for plank-road stringers.—*The Pacific* (San Francisco paper.)

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